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ON THE THINKING SUBSTANCE IN MAN.

By T. COLLYNS SIMON.

1. The first principle of materialism is, that mind is something which depends for its existence upon matter—something which results from some of the combinations of which matter is susceptible; one of which combinations we find in the human brain, as some say, or, according to others, in the human blood; but although these and different other portions of the human body have at different periods been supposed to exhibit the requisite combination, I shall here, for the sake of brevity, speak only of the brain. This theory of course involves the supposition that, when the material combination alluded to ceases, the thing called mind ceases; that there is not really, with a distinct existence of its own in nature, any thinking thing whatever except matter so combined; and that what are commonly supposed to be the operations of an immaterial entity merely result temporarily in this way from peculiar forms of matter, just as any other secretion does; and it is held that our facts give us nothing more.

The opposite theory (called immaterialism, or anti-materialism) is that, besides matter, there is a second original entity or primary element in nature, under the name of "mind" or "spirit," and that this does not in any sense result from, or depend for its existence upon, matter; that from its own nature, as well as from the nature of matter, it would be physically impossible for it to do so.

To put the difference between these two doctrines briefly in other words, it may be stated that materialism represents the percipient element of animal natures as extended, whereas immaterialism undertakes to prove, with mathematical precision, that this element is unextended,—as completely unextended, in its nature, as an idea is.

2. And let me here observe what I think will be readily conceded, that no mere opinion, however probable, is on this subject of any value. This holds true of all questions in philosophy, as well as in science, but of none more than of the present one; and this is a point to which I would in an especial manner invite the attention of all thoughtful men. No amount of mere probability, however great, is, on either side, worth anything. We must here attend to facts only —either those facts of which every one of us is himself conscious, or those facts which scientific men have ascertained experimentally beyond all further room for controversy. The fact, the whole fact, and nothing but the fact, is the watchword of this analysis.

3. Every one of us is conscious that nature consists of what perceives and what is perceived. On this point there neither is nor can be the slightest doubt. The only question here possible is, are these two seemingly distinct things really two distinct things, or are they one and the same thing? Is the percipient an extended entity, and therefore material, or is it an unextended entity, and therefore immaterial? Is it the brain, or is it a spirit? That is what we have to determine.

4. The only definitions which I require to place before the reader are these two:—By the term "matter" I here only mean (as everybody means) that which is perceived under the condition of the senses, whatever that, upon analysis, may turn out to be; *i.e.*, whether that is found to be, in its nature, that which consists of phenomena, or that which consists of the causes by which phenomena are produced. And by the term "percipient element," or "percipient," I only mean that which perceives things, whatever that may turn out to be; *i.e.*, whether it turn out to be matter or not,—something material (like the blood, brain, etc.), or something immaterial, as a spirit is understood to be.

The main thing here then necessary is to exhibit exactly what we know beyond all room for doubt as to the nature of matter—as to the precise nature of that which we perceive under the condition of the senses. The reader's own reflections will almost suffice to carry him through the remainder of the argument.

OF THE NATURE OF MATTER.

5. Now on this first point our data are these:—If you prick the optic nerve with a pin you produce no pain, but light and colour. If you prick the auditory nerve you here also produce no pain, but only a sound; and all the irritants applied to these nerves produce the same effects. In this way it is discovered that a flash of light is a sensation, that a colour is a sensation, and that a sound is a sensation; not, be it carefully observed, that we have a sensation of the cause by which the sensation is produced, nor that we have a sensation of any other thing beside the sensation, and which other thing we call "sound," but that the sound itself is the sensation itself; nor, in the case of colour, that we have the sensation of the pin or other cause by which the sensation is produced, for we have not; nor that we have a sensation of any other thing in addition to the sensation itself, and which other thing we call "colour," but that the colour itself is the sensation itself and that the sensation is the colour. When we speak of "the sensation of sound," or "the sensation of colour," the preposition "of" does not in such phrases

denote that the sensation *belongs* to the sound or to the colour, as so many writers seem to imagine, but that the two terms, "sound" and "sensation," are in apposition, just as when we say "to the number of twenty," "the name of Charles," etc., where we only mean the "number twenty," "the name Charles." The same is true of light. The colour, sound, and light, therefore, which we perceive under the condition of the senses are essentially sensations—things which are effects produced within us, but the cause of which we neither see nor hear—things which depend on conscious life, and which could not possibly exist except under the condition of such life.

Here then is an enormous fact with which very few people, except physiologists, are acquainted. All the light that there is in nature, whether sunlight, gaslight, candlelight, or moonlight, is dependent for its very existence upon conscious life,—upon something capable of perceiving it; a fact quite the opposite of that which any one could have expected. And this is true also of all the colours in nature,—all the colours of trees, and fields, and flowers, of the human body and of the human brain, of the blood and of the organs of sense, of birds and beasts, of streets and rivers,—in short of all material things. All colours are dependent, like sounds, not for their manifestation, as has been mistakenly imagined, but for their very existence, upon being taken cognisance of by something living; that is, they are sensations. And this is true of sounds also. All the sounds that we hear—the song of birds, the voice of man, railway noises of all kinds, and music of all kinds—are all of them pure sensations, effects produced within us, and clearly proved by physiological research to be so.

6. In this way we get by degrees at the nature of the different materials of which the external world is composed. But, as I have already said, it is not only by the prick of a pin that we can make the experiment that gives these facts. Anything which irritates the nerve of sight or of hearing will produce the same effects. In the case of the one nerve this effect will be sound, in the case of the other it will be light and colours. John Müller, M.D., in his admirable work on physiology, explains this vast fact with the utmost clearness and precision (p. 1059, etc.). Narcotics introduced into the blood will produce sounds, and colours, and light, as well as the prick of a pin will. So will also electricity when applied to the nerves I am now speaking of. And what is thus ascertained respecting sounds, and colours, and light is known also, and in the same way, to be true of smells of all kinds and tastes of all kinds. These are known to be sensations, things which can only exist in relation to

percipients; things which, although themselves unconscious, can exist only under the condition of conscious life.

7. Here the man of opinions encounters his first temptation. "It is evident (he says) that colours, sounds, and light would exist whether there were percipients or not; therefore it is my opinion that science must be in error when she makes out that they are sensations." Is he sure that this is the only alternative? Scientific men have never considered this opinion as evidence against the fact. We cannot, as I have said, afford to listen to mere opinions upon this subject. The facts are as I have stated them. Every one can ascertain this for himself. And it is not by denying them that we shall be able to deal with them. I shall nevertheless here observe, for the sake of the less experienced reader, that the solution of the alleged difficulty lies in the principle that things which can only have their being in relation to a percipient (as any one man's knowledge, for instance, on any one subject) exist, like the percipient itself, even when we are not conscious of their existence.

8. I said above that in this manner we get at the primary elements that enter into the composition of the external world. But it will be asked, how can the external world consist of such materials as sensations, since these are things which exist within our own bodies? This question is unobjectionable if it is asked for the purpose of information; but it is clearly not to be put forward as an argument to prove that experimental facts are not facts. I answer then, *first*, that whatever may be the consequences of the facts, we cannot avoid these facts. Every one has it in his power to ascertain that the facts are as I have stated them. No amount of supposed absurdity will justify us in abandoning the smallest of them. I answer, *secondly*, that we have no proof whatever, experimental or otherwise, that the sensation which attends the irritation of a nerve is a thing within the body, however large an amount of probability there may have formerly appeared in favour of that supposition. All that facts go to establish on this point is, that the sensation is only a thing *within*, or rather *dependent* on, the percipient element of our nature, whatever that may be. Before we are in a condition to affirm that the sensation is anything within the body, we must prove that the body itself, or some part of it, is the percipient; and this is what no one now pretends to prove, or even to suggest the slightest probability of. I answer, *thirdly*, that, over and above the consideration that the fact is one of consciousness, we have mathematical demonstration, which is the most incontestable proof that we can have of anything, that the green colour of a twenty-acre field, in the midst of which we are standing, is not a thing within the colours of our own

body, for the extent of this green colour is many times greater than the extent of the colours of our own body; and the greater cannot be contained within the less. We have, therefore, in this circumstance alone the clearest evidence that a sensation is not a thing within the body, but must depend upon some other sort of percipient—some percipient which can deal with all amount of extent that may be necessary, and which, therefore, must be itself independent of all extent.

9. I need not remind the reader that some partisans of materialism have endeavoured to get rid of the fact I now advert to, by saying that the twenty acres of green colour are not really outside the colours of the human body at all, but only *seem* to be outside them. On this point, however, I appeal to each person's common sense whether anything can be more obvious to our organs of sight than it is that the green colour of the trees and fields is not a thing within the colours by which our own body is delineated. Is there any man that is not a theorist who will pretend to say that the light which pervades a crowded ball-room, and the colours of the dresses, and the music, and the voices of those conversing, are all things within his own body—within the colours of his own body, and which have no existence in space external to his own body? and (equally preposterous) that the colours by which his own body is externally delineated are in reality things located within his nervous system and *behind* themselves? We have no alternative here in fighting the battle of truth but to appeal to men's ordinary understanding, and to that unsophisticated discernment by which we are able to distinguish between an angle and a line, or between a square and a triangle. Of course, to deny such distinctions is to deny even mathematical demonstration, and with denials of this order no reasoning can contend. According to the fact of consciousness, therefore, as well as those of science, our sensations are *portions* of the external world, that is, of the world that is external to our bodies, and not at all, as has been alleged by the parties alluded to, things existing within the precincts of our own bodies.

10. I have now to speak of the fifth class of sensations, viz., the sensations of touch, or the feels of things, such as a hard feel, a soft feel, a square feel, a round feel, and all that the blind man perceives of the material world, besides odours, tastes, and sounds. When the colour of our hand comes in contact with the colour of the table, a fresh sensation results; which, moreover, does not result when it is the colour of the chair which comes in contact with the colour of the table. This sensation, like all the others, is a thing wholly dependent on the percipient element of nature, whatever that may turn out to be, and is therefore often figuratively spoken of as being *within* it.

The following quotations from Müller's *Physiology*, although mingling the facts with hypotheses of his own, nevertheless fully recognise the experimental fact, that what we perceive under the condition of contact or touch are sensations only, and not, as was formerly imagined, the causes of sensations. When we feel the table, for instance, we do not feel the cause of what we feel, but the very thing itself which we feel; and that, even Müller fully explains, can only be a sensation. We see and feel sensations only; and not under any circumstances the occult stimulus or force which is supposed by Müller himself and by some other writers to give rise to them. Müller writes:—

"The sensation of touch in our hands makes us acquainted, not absolutely (immediately) with the state of the surfaces of the body touched, but with changes produced in the parts of our body affected by the act of touch." (P. 1068, Dr. Baly's translation.)

And again:—

"If we lay our hand upon the table we become conscious on a little reflection that we do not feel the table, but merely that part of our skin which the table touches." (P. 1081.)

This is what is meant by saying that we feel the table. We experience that sensation which attends the junction of two colours, one of which belongs to the table, and the other to our own body, *i.e.*, to the body which we *immediately* control. This sensation is evidently like colour and sound, a thing external to our own bodies. We are conscious that it is so. We are conscious that what we perceive in this way, whatever it is, is external to our own bodies; and from science we learn that what we thus perceive is not, as we used to imagine, the stimulus by which a certain sensation is produced in our nature, but only that sensation itself. No mere opinion that contradicts such facts can, I repeat, be listened to. Müller indeed is one of those writers who think that colours and sounds only *seem to us* to be outside the body, being, as they say, really within it; and, of course, he thinks the same of the tactile sensations. But I appeal to any one whether the feels of the table do not form part and parcel of the table as much as its colour does, and whether they are not at the same distance from the colour of his own body, as the colours of the table are.

11. It is not, however, only on the contact of external colours with the colours of our own body, that the tactile sensations are excited; for in the same way as various irritants acting on the nerves of sight and hearing are attended with the sensations called colour and sound, so if the nerves of touch be irritated we experience various feels. A narcotic introduced into the blood, for instance, produces the feel of ants creeping over the skin, and the gentlest contact of the finger with the electric chain will produce, upon some other portion of the

body, a feel of violent contact with something external, though nothing has been really in contact with the body in that part. In this manner we arrive at the clearest proof that feels, like colours, are things whose existence is only possible in relation to the living percipient element of animal nature (whatever the element may turn out to be) at the same time that they are also, like colours, part and parcel of the external world.

It is thus evident that all those things which we immediately perceive under condition of the senses are portions of the external world. Light and colours, feels, sounds, tastes, and smells are all pure sensations excited in our nature (not stimuli by which sensations are produced), and are all of them, therefore, what is understood by the term "phenomena."

12. There is, however, another class of phenomena of which I must now speak. The colours of a table have certain shapes and sizes so connected with them that when we see the one we see the other. These we call visible shapes and sizes. They are marked out and delineated by the colours; and if all colour were withdrawn from them all these shapes and sizes would instantly vanish, and what we saw would exist no longer. The feels also of a table, as well as its colours, have certain shapes and sizes in them. The blind man who has nothing to deal with that is extended except these feels, finds them to contain for him shapes and sizes as distinct as the colours by themselves do for us. These we call tangible shapes and sizes; and where neither feels nor colours exist, we have no shapes or sizes. It is utterly impossible for us to imagine a shape or size that is undelineated by anything whatever and equally impossible for us to imagine anything else that can delineate shape or size, except those feels and colours by which we find them delineated and marked out in nature.

13. Thus we see that the shapes and sizes of the external world are qualities or modifications inhering in feels and colours, and of course existing *with* these sensations which they modify, wherever and however these sensations exist; existing therefore in complete dependence, like them, upon something that perceives, and that is therefore conscious.

14. There are other qualities which are to be found in feels only, viz., solidity, weight, hardness, strength, etc. Some writers express themselves as if there were some sort of absolute existence for such things, and as if they did not really exist in, *i.e.*, were not really delineated and marked out by, feels. But very little reflection will convince us that this is not the case; nay, that it would be physically impossible for such things to have any such existence as this. A solidity that no one could possibly perceive under condition of the sense

of touch—a weight that is unattended with the slightest feel of any kind—a hardness, a strength, that no one could ever, under the most favourable circumstances, become sensibly cognisant of. What is the object of speaking of it as possible that such things should have a real existence or even an ideal one? They can clearly be nothing more than mere abstractions.

15. Other qualities are found in sounds, such as intermission and permanence, intensity and faintness. Some sounds are high, some low, etc. But there can no more be this intensity without the sensation called sound than there can be solidity without feel, or than there can be size or shape with neither feel nor colour.

16. Thus, then, we see that in material nature there is nothing whatever before us except sensations and their qualities, *i.e.*, qualified sensations, in groups or singly, and the various laws according to which these sensations or groups of sensations, so qualified, succeed or accompany one another. The sensations themselves and their attributes or qualities are now commonly and accurately spoken of as "phenomena" (a Greek term here denoting "sense-things," or "things sensible"), and material nature as consisting wholly of these phenomena and their laws, as even Comte speaks of it; and this language we see is in strict accordance with the facts of physiology and the facts of consciousness.

17. The principles here explained were summarily stated as follows, by James Mills some thirty years ago, in his *Analysis of the Phenomena of the Human Mind*:—

"The primary importance to men of being able to make known to one another their sensations, made them in all probability begin with inventing marks for that purpose; in other words, making names for their sensations. Two modes presented themselves, one was to give a name to each single sensation. Another was to bestow a name on a cluster of sensations, whenever they were such as occur in a cluster. Of this latter class are all names of what are called *external objects*—rose, water, stone, and so on. Each of these names is the mark of as many sensations as we are said *to derive from* these objects. The name 'rose' is the mark of a sensation of colour, a sensation of shape, a sensation of touch, a sensation of smell, all in conjunction. The name 'water' is the mark of a sensation of colour, a sensation of touch, a sensation of taste, and other sensations, regarded not separately, but as a compound. . . . The occasions, however, are perpetual on which we need marks for sensations, not in clusters, but taken separately. And language is supplied with names of this description. We have the term red, green, hot, cold, sweet, bitter, hard, soft, noise, etc., composing, in the whole, a numerous class. For many sensations, however, we have not names in one word, but make a name out of two or more words. Thus, for the sensation of hearing, derived from

a trumpet, we have only the name 'sound of a trumpet.' In the same manner we have 'smell of a rose', 'taste of an apple', 'sight of a tree', 'feeling of velvet'. Of those names which denote clusters of sensations, it is obvious (but still very necesssry to remark) that some include a greater, some a less, number of sensations. Thus a stone includes only sensations of touch and sight. 'Apple', besides sensations of touch and sight, includes sensations of smell and taste. We not only give names to clusters of sensations, but to clusters of clusters, that is, to a number of minor clusters, united into a greater cluster. Thus we give the name 'wood' to a particular cluster of sensations, the name 'canvass' to another, the name 'rope' to another. To these clusters and many others, joined together in one great cluster, we give the name 'ship'. To a number of these great clusters, united into one, we give the name 'fleet', and so on. How great a number of clusters are united in the term 'house'! and how many more in the term 'city'! (vol. i, p. 91). And again, in using the names tree, horse, man, the names of what I call objects, I am referring, and can be referring, only to my own sensations (and to other people's sensations); in fact, therefore, only naming a certain number of sensations, regarded as in a particular state of combination; that is, in concomitance" (p. 71).

18. I admit that a few metaphysical theorists whose hypotheses, respecting an occult matter, these facts entirely subvert, assert, without any explanation, that phenomena are not real things—that the real things are those occult ones, which they suppose, and from which they say, that phenomena are derived as from their causes, and that the real material world is one utterly inaccessible to the senses. These theorists are they who consider that the noise which we hear in the street is not really in the street at all, but only *seems* to be there, and is really only within the precincts of our own head; and that the colours which we see around us in nature are not really outside those by which our own body is delineated, but only seem to be so; which doctrine they hold to such an extent as to consider that all the colours which we see in a room disappear as soon as we go out of it. But on all these points I appeal from these metaphysicians to the common understanding of mankind. Can anything, I ask, be more real than a violent toothache, although, in its nature, it is purely a phenomenon? Hardness and weight are also, as has been seen, pure phenomena. What is the meaning of saying that these are not real things? As to the alleged occult causes of our sensations, let me ask, When we eat bread are we eating what we feel and see, or only the occult cause of what we feel and see? and as to the theory that the colours leave the objects when we leave the room, are we not as conscious, I ask, that they do not do so, as we are that the colours are there when we are present? All these are facts of which we are conscious; and is it not unreasonable to deny these for the sake of this hypothesis about

occult matter, whose advocates do not even profess to assign any one single ground upon which they can maintain it? As, however, one or two distinguished physicians seem to favour these metaphysics, in some at least of the expressions which they employ, I repeat the following reflections which require to be carefully taken into account in connection with the hypothesis in question:—1. In objects, we *see* only qualified sensations, and never the causes of what we see; and we *feel* nothing except qualified sensations; we never feel the causes of what we feel. 2. When we say that we see the same object which we feel, or that we feel the same object which we see, we only say that we see the colours of a group of which we also perceive the tactile sensations, or that we perceive the tactile sensations of a group in which we likewise see the colours. 3. Whatever the insensible cause of these sensible effects may be, it is something, in its nature, totally unlike any of the effects which we seek to account for by supposing it, since a sensation cannot possibly be like anything that is not a sensation.

OF THE NATURE OF THE PERCIPIENT.

19. I have thus far spoken only of the nature of the material and external world,—of that world, I mean, which we can see and feel; and I have shown, I trust, clearly both from what science teaches and from what we are conscious of, that the brain as well as the rest of the nervous system, and the organs of sense and the blood and the whole human body consist of phenomena and not of the cause of phenomena,—consist entirely of sensations and their qualities grouped together in these various ways, and to no extent whatever of any unseen stimulus, agent, or irritant, by which these effects are produced.

20. The next point is, what is the proof that all the percipients in nature are unextended? That there are percipients in nature, of some kind, needs, as I have said, no proof. We are as sure of that as we are that there is anything for us to perceive. The whole question here, therefore, is only this, what is the proof that the percipient, in each case, is unextended? I answer (as the reader will now himself be able to answer) because the percipient is not any one or more of its own sensations; and size (or extent) is not only *not* known to exist in nature, except as a quality or modification inhering in some of our sensations, but is utterly impossible to conceive as existing in nature in any other way except thus marked out and delineated by some feels, or by some colours, — as impossible as it is to conceive roundness existing in nature without anything round. As the percipient cannot, therefore, be either a sensation or a group of sensations, it would be physically impossible for it to be extended.

21. The same question may be put otherwise, and otherwise

answered. What, it may be asked, is the proof that the brain (or the blood or any other portion of the body) is not the percipient element in animals? This question also, the reader will now be able to answer for himself. The brain, contrary to men's ancient notions, is proved by the facts of physiology to be a phenomenon, or a group of phenomena, or a "cluster of sensations," as James Mill calls it; and it is quite clear that such a thing cannot see anything or feel anything, or in any way perceive anything, being, in its nature, only that which something else—something conscious—can perceive. To consist of sensations, and to experience sensations constitute two very different relations to one and the same thing (viz., to the sensations). One is the relation of the group to its parts; the other is the relation of the percipient to the group. While it was thought that a felt and coloured object like the brain was of a nature that might think and feel and see, it was for many reasons probable and perfectly natural to suppose that the brain did so; but now that this is known from physiological research not to be the case—now that we know the brain to consist of phenomena only—elements which preclude all possibility of its feeling or thinking, we are constrained to admit that the brain cannot be the percipient; and as the same reasoning applies to the blood and to every other portion of extended nature as well as to the brain (*i.e.*, since every portion is a phenomenon), we learn at once that nothing material or extended can in the nature of things be the percipient; in other words, that the percipient, in all animal natures is unextended and immaterial.

22. I may add here as a third argument equally conclusive, upon this point, that to which I have already above alluded; viz., that the twenty acres of green colour (which colour and its size are known to be phenomena) could not possibly subsist within the six feet by two of colour, which appertains to our own bodies, even if our bodies were of such a nature as would enable them to perceive a sensation; which, however, it has been shown that they are not. In other words—over and above the fact that the whole body, as well as every part of the body, is a phenomenon, and therefore incapable of experiencing sensations at all, we thus see, with mathematical precision, that, even if it were not so, the body could not be the percipient of the feels and colours in which size exists, and also that the percipient in nature must of necessity be something wholly independent of and irrespective of size.

23. I do not deny that to persons accustomed to think only of things coloured and things felt; *i.e*, of things in some way or other extended, it may be at first attended with some difficulty to think of a real thing as being unextended—as unextended as a mathematical

point. But, on reflection, we shall see that there are many such realities in nature. Deep sorrow, for instance, is one of these. It is completely unextended, yet completely real. Our knowledge upon any subject is unextended in this sense (*i.e.*, it occupies no space), and so is an idea of any kind; yet knowledge and an idea are, nevertheless, very positive things and very real things,—as much so as any that have measurement of pint or inch or ounce connected with them.

24. I undertook to prove that animal natures consist as much of unextended percipients as they do of extended perceptions, and that the two classes of things cannot possibly be mistaken for one another. It is for the reader to determine whether this has been done. And, above all things, let us have among all classes of thinking men the thorough discussion of the question which a few influential critics have, to some extent, succeeded in repressing. There can be no doubt that (as they thus unconsciously admit) discussion—full and free discussion—is all that is necessary to the clearing up and recognition, even by themselves, of the vast fact here indicated in the Natural History of Man.

LACUSTRINE HABITATIONS AND PRIMÆVAL ANTIQUITIES.

I.

THE physico-mathematical class of the Imperial Academy of Vienna having resolved to establish a special commission for the investigation of lacustrine habitations (meeting July 21st, 1864), Professor Kner was appointed commissioner for Upper Austria, Professor von Hochstetter for Carinthia and Carniolia, and Professor Unger for Hungary. These gentlemen reported the results of their investigations in the academical meetings of October 20th, November 3rd, and December 1st, 1864.

1. *Carinthia and Carniolia.*—Notwithstanding the uncommonly high level of the waters, in consequence of the continued rains in the summer of 1864, Professor von Hochstetter succeeded in stating the existence of fragments of pottery, hazel-nuts, bones, and other traces of human settlements on the banks of the lakes of Keutschach, Wörd, Raurshelen, and Ossiach, in Carinthia. Only the first of these four lakes admitted special investigation. Nearly in its centre is a shallow place, generally four to six feet under water, and ten to twelve feet deep after protracted rains, on whose ground a number of stalks are seen, from between whose interstices half-carbonised